



WATER RESOURCES RESEARCH GRANT PROPOSAL

Project ID: 2004HI57B

Title: The Dynamic Effects of Native versus Non-Native Vegetation on the Ecohydrology of a Hawaiian Rainforest

Project Type: Research

Focus Categories: Hydrology, Ecology, Models

Keywords: Ecohydrology

Start Date: 03/01/2004

End Date: 02/28/2006

Federal Funds: \$22,377

Non-Federal Matching Funds: \$42,709

Congressional District: First

Principal Investigator:

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Abstract

The Kohala-Kona Ecohydrology Project is focused on the dynamic interplay between climate, soil moisture, and vegetation for native and non-native plant communities in Hawaii. Besides being fundamental to plant species' health and community organization, this is the critical link between climate and actual percolation of water to replenish Hawaiian watersheds. The results of this seminal research will have important implications for ecosystem management and for preservation of biodiversity throughout the islands. We will (1) design and construct soil moisture sensors, (2) set-up climatological stations to collect rainfall and ET data, (3) collect sap flow, gas exchange and pre-dawn water potential data from the plants, and (4) begin modeling of the root zone soil moisture profile. This will be done for plots of native as well as non-native vegetation. The results will be used to create plot-scale ecohydrological models of plant-soil water interactions.